

Question 1

What is the valid most compressed format possible of the IPv6 address 2001:0DB8:0000:AB00:0000:0000:1234?

2001:DB8:0:AB00::1234

2001:DB8:0:AB::1234

2001:DB8::AB00::1234

2001:DB8:0:AB:0:1234

Explanation: There are two rules defining how an IPv6 address can be compressed. The first rule states that leading zeros in a hextet can be eliminated. The second rule states that a single :: can be used to represent one or more contiguous all zero hextets. There can be one and only one :: in an IPv6 address.

Question 2

What is the prefix associated with the IPv6 address 2001:DB8:D15:EA:CC44::1/64?

- 2001::/64
- 2001:DB8::/64
- **2001:DB8:D15:EA::/64**
- 2001:DB8:D15:EA:CC44::/64

Explanation: The /64 represents the network and subnet IPv6 fields. The fourth field of hexadecimal digits is referred to as the subnet ID. The subnet ID for this address is 2001:DB8:D15:EA::0/64.

Question 3

What type of address is automatically assigned to an interface when IPv6 is enabled on that interface?

- global unicast
- **link-local**
- loopback
- unique local

Explanation: When IPv6 is enabled on any interface, that interface will automatically generate an IPv6 link-local address.

Question 4

Which IPv6 network prefix is only intended for local links and can not be routed?

- 2001::/3
- FC00::/7
- **FE80::/10**
- FEC0::/10

Explanation: FE80::/10 is a link-local prefix. Devices with only link-local addresses can communicate with other devices on the same network but not with devices on any other network.

Question 5

What is the purpose of the command ping ::1?

- **It tests the internal configuration of an IPv6 host.**
- It tests the broadcast capability of all hosts on the subnet.
- It tests the multicast connectivity to all hosts on the subnet.
- It tests the reachability of the default gateway for the network.

Explanation: The address ::1 is an IPv6 loopback address. Using the command ping ::1 tests the internal IP stack to ensure that it is configured and functioning correctly. It does not test reachability to any external device, nor does it confirm that IPv6 addresses are properly configured on the host.

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- **FE80::/10**
- FEC0::/10

Explanation: FE80::/10 is a link-local prefix. Devices with only link-local addresses can communicate with other devices on the same network but not with devices on any other network.

Question 7

What is the network address for the IPv6 address 2001:DB8:AA04:B5::1/64?

- 2001::/64
- 2001:DB8::/64
- 2001:DB8:AA04::/64
- **2001:DB8:AA04:B5::/64**

Explanation: The /64 represents the network and subnet IPv6 fields which are the first four groups of hexadecimal digits. The first address within that range is the subnetwork address of 2001:DB8:AA04:B5::/64.

Question 8

Which address type is not supported in IPv6?

- private
- multicast
- unicast
- **broadcast**

Explanation: IPv6 supports unicast, private, and multicast addresses but does not support Layer 3 broadcasts.

Question 9

What is indicated by a successful ping to the ::1 IPv6 address?

- The host is cabled properly.
- The default gateway address is correctly configured.

- All hosts on the local link are available.
- The link-local address is correctly configured.
- **IP is properly installed on the host.**

Explanation: The IPv6 address ::1 is the loopback address. A successful ping to this address means that the TCP/IP stack is correctly installed. It does not mean that any addresses are correctly configured.

Question 10

What is the most compressed representation of the IPv6 address 2001:0db8:0000:abcd:0000:0000:0000:0001?

- 2001:db8::abcd:0:1
- 2001:0db8:abcd::1
- 2001:0db8:0000:abcd::1
- **2001:db8:0:abcd::1**
- 2001:0db8:abcd::0001

Explanation: The IPv6 address 2001:0db8:0000:abcd:0000:0000:0000:0001 in its most compressed format would be 2001:db8:0:abcd::1. The one leading zero in the second hextet can be removed. The first hextet of zeros would be compressed to a single zero. The three consecutive hextets of zeros can be compressed to a double colon ::. The three leading zeros in the last hextet can be removed. The double colon :: can only be used once in an address.

Question 11

What is the minimum configuration for a router interface that is enabled for IPv6?

- **To have a link-local IPv6 address**
- to have both an IPv4 and an IPv6 address
- to have a self-generated loopback address
- to have both a link-local and a global unicast IPv6 address
- to have only an automatically generated multicast IPv6 address

Explanation: With IPv6, a router interface typically has more than one IPv6 address. The router will at least have a link-local address that can be automatically generated, but the router commonly has an global unicast address also configured.

Question 12

At a minimum, which address is required on IPv6-enabled interfaces?

- **link-local**
- unique local
- site local
- global unicast

Explanation: All IPv6 enabled interfaces must at minimum have a link-local address. Other IPv6 addresses can be assigned to the interface as required.

Question 13

**What are three parts of an IPv6 global unicast address?
(Choose three.)**

- **a global routing prefix that is used to identify the network portion of the address that has been provided by an ISP**
- an interface ID that is used to identify the local network for a particular host
- a global routing prefix that is used to identify the portion of the network address provided by a local administrator
- **a subnet ID that is used to identify networks inside of the local enterprise site**
- **an interface ID that is used to identify the local host on the network**

Explanation: There are three elements that make up an IPv6 global unicast address. A global routing prefix which is provided by an ISP, a subnet ID which is determined by the organization, and an interface ID which uniquely identifies the interface interface of a host.

Question 14

Your organization is issued the IPv6 prefix of 2001:db8:130f::/48 by your service provider. With this prefix, how many bits are available for your organization to create /64 subnetworks if interface ID bits are not borrowed?

- 8
- **16**
- 80
- 128

Explanation: The global routing prefix that is assigned to the organization has 48 bits. The next 16 bits are used for the subnet ID. This makes up the first 64 bits of the address, which is typically the network portion of the address. The remaining 64 bits of the 128-bit IPv6 address are for the interface ID (or host) portion of the address.

Question 15

Which type of IPv6 address is not routable and used only for communication on a single subnet?

- global unicast address
- **link-local address**
- loopback address
- unique local address
- unspecified address

Explanation: Link-local addresses have relevance only on the local link. Routers will not forward packets that include a link-local address as either the source or destination address.

100%

You have scored 100%.

Congratulations, you have passed the exam.

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